State of Illinois
Department of Transportation
Division of Highways
Springfield

_____

SPECIFICATIONS
FOR
BITUMINOUS MIXTURE FOR MAINTENANCE USE
LIQUID ASPHALT TYPE

Serial Number: M19-02a

1. DESCRIPTION. These specifications cover coarse-graded and fine-graded bituminous mixtures for use in maintaining small areas on flexible and rigid type pavements. The bituminous premix shall be composed of mineral aggregate uniformly coated with liquid asphalt plus additive and prepared cold as further described below. The mixtures shall be capable of being loaded into trucks by either hand shovels or power loading equipment, shall be sufficiently workable for placing with shovels, rakes or other hand tools, and shall readily compact by hand tamping, hand or power rolling, or under the action of traffic at the mixing temperature or at temperatures as low as 4 °C (40 °F), immediately after preparation or over a period of several months in a stockpile. The mixtures shall remain in place when used to patch wet or dry pavements and shall be stable under normal traffic conditions.

2. MATERIALS. Control of the materials shall be according to the general requirements of Section 106 of the current *Standard Specifications for Road and Bridge Construction*. At the discretion of the Engineer, a twenty-five pound sample of the aggregate (s), a one-quart sample of the bituminous material and a one-pint sample of the additive shall be submitted to the Bureau of Materials and Physical Research, 126 East Ash Street, Springfield, Illinois, for checking the dosage rate and compatibility of the additive with the other ingredient materials.

(a) Aggregate

1. Coarse Aggregate shall consist of crushed stone, crushed gravel, or gravel of Class C quality or better, as defined in Article 1004.01 of the *Standard Specifications for Road and Bridge Construction.*

2. Fine Aggregate shall consist of sand, stone sand, or stone screenings* of Class B quality or better, as defined in Article 1003.01 of the *Standard Specifications for Road and Bridge Construction*.

*The use of stone sand or stone screenings will increase in place stability, but reduce stockpile workability.

(b) Additive

The additive shall be an anti-stripping additive approved by the Department. The additive shall be added to the bituminous material at the dosage rate (0.8 to 1.5 percent by weight of total liquid) recommended by the Engineer and shall be thoroughly mixed for at least four (4) hours prior to being incorporated into the mix. A list of approved additives is available on request.

(c) Bituminous Materials

The bituminous material used shall be either liquid asphalt MC-250, MC-800, SC-250, or SC-800 conforming to the requirements of Section 1009 of the *Standard Specifications for Road and Bridge Construction*. The Engineer reserves the right to specify the grade and type to be used.

3. INSPECTION. The Engineer or his authorized representative shall have access at any time to all parts of the plant in order to verify weights or proportions and character of materials used in the preparation of the mixture. The manufacturer shall afford such facilities as may be required for making inspection at the plant and for collecting and forwarding samples of the bituminous mixtures to the Department

4. PLANT AND EQUIPMENT. Storage facilities and all equipment used in preparation of the mixture shall be approved by the Department. An approved drier shall be available for surface drying the aggregated when needed. The materials for individual batches shall be measured accurately either by volume or weight, by approved methods and equipment. A batch type mixture of approved design and capacity shall be used in mixing the ingredient materials. However, approval for the use of a continuous mixer may be given if it can be shown that satisfactory results will be obtained.

5. PREPARATION OF MIXTURE. The aggregate shall be surfaced dry at the time of mixing and shall contain not more than 1.5 percent moisture by weight. Aggregates which do not conform to this requirement shall be dried by natural or artificial means before being used in the mixture. The mixture at the time of mixing shall have a temperature adequate for good mixing and below the flash point of the bituminous material. The bituminous material shall be heated to such a temperature that it will be workable when used in preparation of the mixture.

6. COMPOSITION OF MIXTURES. The Department shall specify the type (gradation) of the mixture to be used. The ingredients shall be combined in such a manner as to produce a mixture which when discharged shall be workable. The mixture shall conform to the following composition limits by weight.

Gradation of Extracted Aggregate (100%)

Percent Passing Sieve	Nominal Size			
	1/2" to No. 4	1/2" to No. 8	3/8" to No. 8	3/8" to No. 200
1/2"	100	100	---	---
3/8"	60-90	---	100	100
No. 4	0-25	30-55	20-50	25-45
No. 8	0-17	23-54	0-17	17-35
No. 30	---	10-25	---	10-20
No. 200	0-6.0	0-5.0	0-6.0	0-6.0
Residual Bitumen, (Includes Additive)%	3.0-5.0	4.0-7.0	3.0-5.0	3.5-7.0

Gradation of Extracted Aggregate (100%)

Percent Passing Sieve	Nominal Size		
	Alternate 1/2" to No. 200	Alternate 3/8" to No. 8	Alternate 3/8" to No. 200
1/2"	95-100	---	---
3/8"	---	100	100
No. 4	50-75	20-65	25-65
No. 8	38-54	0-17	17-35
No. 30	10-30	---	10-20
No. 200	0-5.0	0-6.0	0-5.0
Residual Bitumen, (Includes Additive)%	4.0-6.0	3.0-5.5	3.5-7.5

The percentage of bituminous material shall be determined by the Engineer. The right is reserved to make, at any time during the progress of the work, such changes in the proportions of bitumen and aggregate as the Engineer may consider necessary or desirable within the limits of the specifications. After the proportions of the ingredient materials have been set there shall be no variation from the same without the Engineer's approval.

It is the responsibility of the producer to produce a mixture conforming to the requirements of these specifications and satisfactory to the Department.

Effective October 15, 2002

This specification supersedes Serial Number M19-02, effective February 1, 2002.

RWH/dg/M19-02a